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Kobrin

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(54) **ANTI-COUNTERFEITING FEATURES AND METHODS OF FABRICATION AND DETECTION**

(58) **Field of Classification Search**

CPC G07D 7/00; G07D 7/003; G07D 7/004;
G07D 7/0043; G07D 7/0047; G07D
7/005;

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(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,720,798 A 1/1988 Reed et al.
4,888,270 A 12/1989 Sullivan

(Continued)

FOREIGN PATENT DOCUMENTS

EP 1727220 A2 11/2006
EP 2028017 A2 2/2009

(Continued)

OTHER PUBLICATIONS

International Search Report and Written Opinion for International
Application No. PCT/CH2008/000163, dated Sep. 9, 2008.

(Continued)

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(57) **ABSTRACT**

Aspects of the present disclosure include an anti-counterfeiting pattern that is identifiable by sheet resistance mapping metrology, a method of fabricating such an anti-counterfeiting device, and a method of detecting such an anti-counterfeiting device by imaging the pattern with sheet resistance mapping metrology. This abstract is provided to comply with rules requiring an abstract that will allow a searcher or other reader to quickly ascertain the subject matter of the technical disclosure. It is submitted with the understanding that it will not be used to interpret or limit the scope or meaning of the claims.

28 Claims, 7 Drawing Sheets

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 13 days.

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(2014.10); **B42D 25/36** (2014.10); **B42D**
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